

In the Claims:

Please amend claims 1, 9, 15, 16, 17, 26, 30, 36 and 39 as indicated below.

1. (Currently amended) An apparatus for use in transactions, comprising:

non-volatile memory containing a set of multiple identifiers associated with a same customer account, wherein said multiple identifiers are also known to an agency providing said customer account to a customer,

a processor operable to select, for each of a plurality of transactions involving the same customer account, a different identifier from said set of multiple identifiers for use with the respective transaction, and

a communications facility operable to communicate with a terminal,

wherein the apparatus is operable to:

receive bill details for a given transaction of said plurality of transactions from the terminal through the communications facility, wherein the bill details specify an amount to be paid,

generate a transaction record that includes the bill details and a particular identifier selected by the processor from said set of multiple identifiers,

digitally sign the transaction record with a digital signature, the digitally signed transaction record including the bill details and the particular identifier, wherein the digitally signed transaction record does not include information that identifies said customer to the terminal; and

transmit the digitally signed transaction record to the terminal through the communications facility without providing information that identifies said customer to the terminal.

2. (Original) The apparatus of claim 1, wherein each of the identifiers in said set of multiple identifiers is allocated by the agency uniquely to the apparatus.

3. (Canceled)

4. (Previously presented) The apparatus of claim 1, wherein the digital signature is generated using a cryptographic key contained within the non-volatile memory.

5. (Previously presented) The apparatus of claim 1, wherein the transaction record is encrypted.

6. (Original) The apparatus of claim 1, wherein said apparatus is provided within inert packaging to allow implantation into the human body.

7. (Previously presented) The apparatus of claim 1, wherein said apparatus is operable to engage a first class of terminals external to the apparatus for making a transaction, and a second class of terminals external to the apparatus to enter or to update account information stored in the non-volatile memory.

8. (Original) The apparatus of claim 7, further comprising first and second power circuits that are activated by said first and second class of terminals respectively, wherein activation of said second power circuit does not allow account information to be entered or updated in at least certain portions of said non-volatile memory.

9. (Currently amended) A method for making a transaction with a device, comprising:

storing within the device a set of multiple identifiers associated with a same customer account, wherein said multiple identifiers are also known to an agency providing said customer account to a customer, and

for each of a plurality of transactions involving the same customer account:

the device selecting a different identifier from said set of multiple identifiers for use with the respective transaction,

engaging a terminal,

the device receiving bill details for the respective transaction from the terminal, the bill details specifying an amount to be paid;

the device generating a transaction record that includes the bill details, and said selected identifier that was selected from said set of multiple identifiers, and

the device digitally signing the transaction record with a digital signature, the digitally signed transaction record including the bill details and the particular identifier, wherein the digitally signed transaction record does not include information that identifies said customer to the terminal;

the device transmitting the digitally signed transaction record to the terminal without providing information that identifies said customer to the terminal.

10. (Original) The method of claim 9, wherein each of the identifiers in said set of multiple identifiers is allocated by the agency uniquely to the device.

11. (Canceled)

12. (Previously presented) The method of claim 9, wherein the digital signature is generated using a cryptographic key contained within the non-volatile memory.

13. (Previously presented) The method of claim 9, further comprising encrypting the transaction records.

14. (Previously presented) The method of claim 9, further comprising, limiting the number of transactions performed during a given period of time in order to prevent rapid read-out of the identifiers.

15. (Currently amended) Apparatus for use in transactions, including:

means for storing a set of multiple identifiers associated with a same customer account, wherein said multiple identifiers are also known to an agency providing said customer account to a customer,

means for selecting, for each of a plurality of transactions involving the same customer account, a different identifier from said set of multiple identifiers for use with the respective transaction,

means for communicating with a terminal;

means for receiving bill details for each of the plurality of transactions from the terminal, wherein the bill details specify an amount to be paid for the respective transaction;

means for creating a respective transaction record for each of the plurality of transactions, wherein the respective transaction record includes the bill details and the selected identifier for that transaction;

means for digitally signing the respective transaction record, wherein the digitally signed respective transaction record comprises a digital signature that is generated using a cryptographic key, wherein the digitally signed respective transaction record includes the bill details and the selected identifier, wherein the digitally signed transaction record does not include information that identifies said customer to the terminal, and

means for providing the digitally signed respective transaction record to the terminal without providing information that identifies said customer to the terminal.

16. (Currently amended) Apparatus for use in making a transaction, including:

non-volatile memory containing a set of multiple identifiers, wherein said multiple identifiers are also known to an agency providing a customer account to a customer ~~associated with the transaction~~, and

a processor operable to randomly or pseudo-randomly select a given identifier from said set of multiple identifiers for use in a given transaction;

a communications facility operable to communicate with a terminal,

wherein the apparatus is operable to:

receive bill details for the given transaction from the terminal through the communications facility, wherein the bill details specify an amount to be paid,

generate a transaction record that includes the bill details and the given identifier that is randomly or pseudo-randomly selected by the processor from said set of multiple identifiers,

digitally sign the transaction record with a digital signature, the digitally signed transaction record including the bill details and the given identifier, wherein the digitally signed transaction record does not include information that identifies said customer to the terminal;
and

transmit the digitally signed transaction record to the terminal through the communications facility without providing information that identifies said customer to the terminal.

17. (Currently amended) A method, comprising:

opening an account record in an agency computer system, wherein said agency is to provide the account to a customer,

generating a set of multiple identifiers to be used for transactions on the account,

storing the set of multiple identifiers in the agency computer system,

storing the set of multiple identifiers on a portable transaction device,

receiving a public key from the portable transaction device;

receiving from a terminal, a digitally signed transaction record comprising a digital signature generated on the portable transaction device[[,]] wherein the digitally signed transaction record comprises bill details provided by

the terminal to the portable transaction device prior to the creation of the digital signature, wherein the bill details specify an amount to be paid for a transaction corresponding to the transaction record, wherein the digitally signed transaction record further comprises a particular identifier selected by the portable transaction prior to the creation of the digital signature, wherein the digitally signed transaction record does not include information that identifies said customer to the terminal, and

decrypting and validating the digital signature of the digitally signed transaction record with the public key.

18. (Original) The method of claim 17, wherein the identifiers are unique to the account for the agency.

19. (Original) The method of claim 18, further comprising adding the identifiers to an index, wherein said index maps from an identifier to the corresponding account.

20. (Previously presented) The method of claim 17, wherein the multiple identifiers are a subset of identifiers selected from a larger set of possible identifiers.

21. (Original) The method of claim 17, wherein the identifiers within said set of multiple identifiers are unrelated to one another.

22. (Original) The method of claim 17, wherein the identifiers are generated on the agency computer system, and are transmitted to the portable transaction device for storage thereon.

23. (Original) The method of claim 17, further comprising generating at least one cryptographic key for use with the account.

24. (Original) The method of claim 17, further comprising making a prepayment onto the account prior to using the account for transactions.

25. (Previously presented) The method of claim 17, further comprising, prior to opening the account, determining an identity of a person who is to hold the account.

26. (Currently amended) A method for performing a given transaction at a terminal using a portable transaction device associated with a customer, comprising:

generating a bill for the given transaction at the terminal,

engaging the portable transaction device with the terminal,

transmitting bill details of the bill from the terminal to the portable transaction device, the bill details including an amount to be paid for the transaction,

selecting via the portable transaction device, for each of a plurality of transactions involving a same customer account, a different account identifier from a set of multiple account identifiers stored on the portable transaction device for use in transactions, wherein said plurality of transactions includes said given transaction,

generating a transaction record on the portable transaction device, the transaction record including the bill details and the selected account identifier that is selected via the portable transaction device from said set of multiple account identifiers for said given transaction,

utilizing the portable transaction device to digitally sign the transaction record with a digital signature, the digitally signed transaction record including the bill details and the selected account identifier, wherein the digitally

signed transaction record does not include information that identifies said customer to the terminal, and

transmitting the digitally signed transaction record from the portable transaction device to the terminal without providing information that identifies said customer to the terminal.

27. (Previously presented) The method of claim 26, wherein digital signature is generated using a cryptographic key from the transaction device.

28. (Previously presented) The method of claim 26, wherein the transaction device is associated with a customer account, and wherein said multiple account identifiers are also known to an agency providing said customer account, the method further comprising:

transmitting the transaction record from the terminal to an agency computer,

accessing an account record for the customer account based on the selected account identifier included in the transaction record,

validating the transaction, and

updating the account record in respect of the validated transaction.

29. (Original) The method of claim 28, wherein prior to transmitting the transaction record from the terminal to the agency computer, the terminal incorporates its own copy of the bill into the transaction record.

30. (Currently amended) A method of operating a computer account system at an agency, the method comprising:

maintaining records of a plurality of customer accounts on the computer account system;

storing multiple sets of identifiers on the computer account system, wherein each of said sets is associated with a respective one of said customer accounts, wherein each of said sets comprises at least two identifiers belonging to the set, wherein each set of said multiple sets is also stored on a respective portable transaction device of a plurality of portable transaction devices;

receiving from a terminal, a digitally signed transaction record generated by a particular portable transaction device for a transaction on a given customer account, wherein the digitally signed transaction record comprises a digital signature generated by the particular portable transaction device associated with the customer account, wherein the digitally signed transaction record includes bill details provided by the terminal to the particular portable transaction device, wherein the digitally signed transaction record further includes a particular identifier selected by the particular portable transaction device from the set of identifiers stored within that portable transaction device, wherein the digitally signed transaction record does not include information that identifies a customer associated with one of the plurality of customer accounts to the terminal;

verifying the digital signature,

accessing the particular identifier within the digitally signed transaction record,

from said multiple sets of identifiers, determining a particular set of identifiers to which the accessed identifier belongs, and from the determined particular set determining a particular customer account for the transaction, wherein the particular customer account is a customer account to which the particular set is associated, and

updating an account record of the particular customer account according to ~~in~~
~~respect of~~ the transaction.

31. (Previously presented) The method of claim 30, wherein determining the particular set of multiple identifiers the accessed identifier belongs to comprises accessing an index that maps identifiers to corresponding account records.

32. (Canceled)

33. (Original) The method of claim 30, further comprising opening a new customer account by:

creating a new account record for the new customer account, and

storing a set of multiple identifiers associated with the new customer account into the new account record.

34. (Previously presented) The method of claim 33, further comprising:

generating the set of multiple identifiers associated with the new customer account, and

transmitting the generated set of multiple identifiers to a given portable transaction device for use in communications between the computer account system and the given portable transaction device.

35. (Previously presented) The method of claim 33, further comprising generating at least one cryptographic key for use in communications between the computer account system and the given portable transaction device.

36. (Currently amended) A computer account system at an agency, said system comprising:

a plurality of stored customer account records, wherein each customer account record incorporates a set of multiple identifiers associated therewith, and

a stored index that indicates a mapping of each of the sets of multiple identifiers to a corresponding account record of said plurality of stored customer account records, wherein each set of said multiple sets is also stored on a respective portable transaction device of a plurality of portable transaction devices that are distinct from said system;

wherein the system is configured to:

receive from a terminal, a digitally signed transaction record generated by a particular portable transaction device for a transaction on a customer account, wherein the digitally signed transaction record comprises a digital signature generated by the particular portable transaction device associated with the customer account, wherein the digitally signed transaction record includes bill details provided by the terminal to the particular portable transaction device, wherein the digitally signed transaction record further includes a particular identifier selected by the particular portable transaction device from the set of identifiers stored within that portable transaction device; wherein the bill details specify an amount to be paid for the transaction, wherein the digitally signed transaction record does not include information that identifies a customer associated with one of the plurality of customer account records to the terminal;

in response to validating the digital signature with a cryptographic key, access the particular identifier within the digitally signed transaction record, determine a particular set of multiple identifiers to which the accessed identifier belongs, and determine the particular customer account to which the accessed identifier belongs as specified by said index, and

update an account record of the particular customer account in regard to the transaction.

37. (Original) The system of claim 36, wherein the multiple identifiers associated with the customer account record are unique to that account record.

38. (Canceled)

39. (Currently amended) A computer account system at an agency, said system comprising:

means for storing a plurality of customer account records, wherein each customer account record incorporates a set of multiple identifiers associated therewith, wherein each set is also stored on a respective portable transaction device of a plurality of portable transaction devices that are distinct from said system;

means for storing a mapping of each of the sets of multiple identifiers to a corresponding account record of said plurality of stored customer account records,

means for receiving from a terminal, a digitally signed transaction record generated by a particular portable transaction device for a transaction on a customer account, wherein the digitally signed transaction record

comprises a digital signature generated by the particular portable transaction device associated with the customer account, wherein the digitally signed transaction record includes bill details provided by the terminal to the particular portable transaction device, wherein the digitally signed transaction record further includes a particular identifier selected by the particular portable transaction device from the set of identifiers stored within that portable transaction device; wherein the bill details specify an amount to be paid for the transaction, wherein the digitally signed transaction record does not include information that identifies a customer associated with one of the plurality of customer account records to the terminal;

means for accessing an identifier within digitally signed transaction record, determining a particular set of multiple identifiers to which the accessed identifier belongs, and determine the particular customer account to which the accessed identifier belongs as specified by said mapping,

means for accessing the digital signature comprised within the received transaction request and validating the digital signature, and

means for updating a customer account record of the customer account to which the accessed identifier belongs in accordance with the digitally signed transaction record and in response to validating the digital signature.